CLAIMS:

1. A novel nucleic acid molecule in isolated form wherein said nucleic acid molecule comprises a novel DEC-205 intergenic splice variant or a derivative, homologue or analogue thereof.

2. The novel nucleic acid molecule according to claim 1 wherein said nucleic acid molecule comprises a DEC-205/DCL-1 intergenic splice variant or a derivative, homologue or analogue thereof.

3. The nucleic acid molecule according to claim 2 comprising a nucleotide sequence encoding or a nucleotide sequence complementary to a nucleotide sequence encoding an amino acid sequence substantially as set forth in SEQ ID NO: 2 or SEQ ID NO: 21 or a derivative, homologue or mimetic thereof or having at least about 45% or greater similarity to at least 30 contiguous amino acids in SEQ ID NO: 2 or SEQ ID NO: 21 or a derivative, homologue or analogue of said nucleic acid molecule.

4. The nucleic acid molecule according to claim 2 in isolated form comprising a nucleotide sequence substantially as set forth in SEQ ID NO: 1 or SEQ ID NO: 20 capable of hybridising to the sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 20 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

5. The nucleic acid molecule of claim 4 wherein said nucleic acid molecule is a cDNA molecule.

6. The nucleic acid molecule according to claim 4 or 5 which encodes an amino acid sequence corresponding to an amino acid sequence set forth in SEQ ID NO: 2 or SEQ ID NO: 21 or a sequence having at least about 45% similarity to at least 30 contiguous amino acids in SEQ ID NO: 2 or SEQ ID NO: 21 or a derivative, homologue or analogue of said nucleic acid molecule.

7. The nucleic acid molecule according to claim 6 comprising a sequence of nucleotides substantially as set forth in SEQ ID NO: 1 or SEQ ID NO: 20.

8. The nucleic acid molecule according to claim 2 comprising a nucleotide sequence encoding or a nucleotide sequence complementary to a nucleotide sequence encoding an amino acid sequence substantially as set forth in SEQ ID NO: 5 or a derivative, homologue or mimetic thereof or having at least about 45% or greater similarity to at least 30 contiguous amino acids in SEQ ID NO: 5 or a derivative, homologue or analogue of said nucleic acid molecule.

9. The novel nucleic acid molecule according to claim 2 comprising a nucleotide sequence substantially as set forth in SEQ ID NO: 4 or a nucleotide sequence capable of hybridising to the sequence set forth in SEQ ID NO: 4 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

10. The nucleic acid molecule according to claim 9 wherein said nucleic acid molecule is a cDNA molecule.

11. The nucleic acid molecule according to claim 9 or 11 which encodes an amino acid sequence corresponding to an amino acid sequence set forth in SEQ ID NO: 5 or a sequence having at least 45% similarity to at least 30 contiguous amino acids in SEQ ID NO: 5 or a derivative, homologue or analogue of said nucleic acid molecule.

12. The novel nucleic acid molecule according to claim 2 comprising a nucleotide sequence substantially as set forth in SEQ ID NO: 32 or a nucleotide sequence capable of hybridising to the sequence set forth in SEQ ID NO: 32 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

13. The nucleic acid molecule according to claim 12 wherein said nucleic acid molecule is a genomic molecule.

14. The nucleic acid molecule according to claim 12 or 13 which encodes an amino acid sequence corresponding to an amino acid sequence set forth in SEQ ID NO: 5 or a sequence having at least about 45% similarity to at least 30 contiguous amino acids in SEQ ID NO: 5 or a derivative, homologue or analogue of said nucleic acid molecule.

15. The nucleic acid molecule according to claim 2 comprising a nucleotide sequence encoding or a nucleotide sequence complementary to a nucleotide sequence encoding an amino acid sequence substantially as set forth in SEQ ID NO: 8 or a derivative, homologue or mimetic thereof or having at least about 45% or greater similarity to at least 30 contiguous amino acids in SEQ ID NO: 8 or a derivative, homologue or analogue of said nucleic acid molecule.

16. The nucleic acid molecule according to claim 2 comprising a nucleotide sequence substantially as set forth in SEQ ID NO: 7 or a nucleotide sequence capable of hybridising to the sequence set forth in SEQ ID NO: 7 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

17. The nucleic acid molecule according to claim 16 wherein said nucleic acid molecule is a cDNA molecule.

18. The nucleic acid molecule according to claim 16 or 17 which encodes an amino acid sequence corresponding to an amino acid sequence set forth in SEQ ID NO: 8 or a sequence having at least about 45% similarity to at least 30 contiguous amino acids in SEQ ID NO: 8 or a derivative, homologue or analogue of said nucleic acid molecule.

19. The nucleic acid molecule according to claim 2 comprising a nucleotide sequence encoding or a nucleic acid molecule sequence complementary to a nucleotide sequence encoding an amino acid sequence substantially as set forth in SEQ ID NO: 11 or a derivative, homologue or mimetic thereof or having at least about 45% or greater similarity

to at least 30 contiguous amino acids in SEQ ID NO: 11 or a derivative, homologue or analogue of said nucleic acid molecule.

20. The novel nucleic acid molecule according to claim 2 comprising a nucleotide sequence substantially as set forth in SEQ ID NO: 10 or a nucleotide sequence capable of hybridising to the sequence set forth in SEQ ID NO: 10 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

21. The nucleic acid molecule according to claim 20 wherein said nucleic acid molecule is a cDNA molecule.

22. The nucleic acid molecule according to claim 20 or 21 which encodes an amino acid sequence corresponding to an amino acid sequence set forth in SEQ ID NO: 11 or a sequence having at least about 45% similarity to at least 30 contiguous amino acids in SEQ ID NO: 11 or a derivative, homologue or analogue of said nucleic acid molecule.

23. The nucleic acid molecule according to claim 3 wherein said complementary nucleotide sequence is substantially as set forth in SEQ ID NO: 3 or 22 or capable of hybridising to the sequence set forth in SEQ ID NO: 3 or 22 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

24. The nucleic acid molecule according to claim 8 wherein said complementary nucleotide sequence is substantially as set forth in SEQ ID NO: 6 or capable of hybridising to the sequence set forth in SEQ ID NO: 6 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

25. The novel nucleic acid molecule according to claim 15 comprising a nucleotide sequence substantially as set forth in SEQ ID NO: 9 or a nucleotide sequence capable of hybridising to the sequence set forth in SEQ ID NO: 9 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

26. The novel nucleic acid molecule according to claim 19 comprising a nucleotide sequence substantially as set forth in SEQ ID NO: 12 or a nucleotide sequence capable of hybridising to the sequence set forth in SEQ ID NO: 12 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

27. The novel nucleic acid molecule according to claim 2 comprising a nucleotide sequence substantially as set forth in SEQ ID NO: 13 or a nucleotide sequence capable of hybridising to the sequence set forth in SEQ ID NO: 13 under low stringency conditions at 42°C or a derivative, homologue or analogue of said nucleic acid molecule.

28. The nucleic acid molecule according to claim 27 wherein said nucleic acid molecule is a cDNA molecule.

29. An isolated protein wherein said protein is DEC-205 intergenic splice variant or a derivative, homologue, analogue, chemical equivalent or mimetic thereof of said protein.

30. An isolated protein according to claim 29 wherein said intergenic splice variant is DEC-205/DCL-1 intergenic splice variant or a derivative, homologue, analogue, chemical equivalent or mimetic thereof of said protein.

31. The protein according to claim 30 having an amino acid sequence substantially as set forth in SEQ ID NO: 2 or SEQ ID NO: 21 or a sequence having at least about 45% similarity to at least 30 contiguous amino acids in SEQ ID NO: 2 or SEQ ID NO: 21 or a derivative, homologue, analogue, chemical equivalent or mimetic of said protein.

32. The protein according to claim 30 encoded by a nucleotide sequence substantially as set forth in SEQ ID NO: 1 or SEQ ID NO: 20 or capable of hybridising to the sequence set forth in SEQ ID NO: 1 or SEQ ID NO: 20 under low stringency conditions at 42°C or a derivative, homologue, analogue, chemical equivalent or mimetic of said protein.

33. The protein according to claim 32 wherein said nucleotide sequence encodes an amino acid sequence substantially as set forth in SEQ ID NO: 2 or SEQ ID NO: 21 having at least about 45% similarity to at least 30 contiguous amino acids in SEQ ID NO: 2 or SEQ ID NO: 21 or a derivative, homologue, analogue, chemical equivalent or mimetic of said protein.

34. The protein according to claim 30 having an amino acid sequence substantially as set forth in SEQ ID NO: 5, SEQ ID NO: 8, or SEQ ID NO: 11 or a sequence having at least about 45% similarity to at least 30 contiguous amino acids in SEQ ID NO: 5, SEQ ID NO: 8, or SEQ ID NO: 11, respectively, or a derivative, homologue, analogue, chemical equivalent or mimetic of said protein.

35. The protein according to claim 30 encoded by a nucleotide sequence substantially as set forth in SEQ ID NOs: 4, 7 or 10 or capable of hybridising to the sequence set forth in SEQ ID NOs: 4, 7 or 10 under low stringency conditions at 42°C or a derivative, homologue, analogue, chemical equivalent or mimetic of said protein.

36. The protein according to claim 35 wherein said nucleotide sequence encodes an amino acid sequence substantially as set forth in SEQ ID NOs: 5, 8 or 11 or an amino acid sequence having at least about 45% similarity to at least 30 contiguous amino acids in SEQ ID NOs: 5, 8 or 11 or a derivative, homologue, analogue, chemical equivalent or mimetic of said protein.

37. The protein according to any one of claims 29 to 36 in a homodimeric form.

38. The protein according to any one of claims 29 to 36 in a heterodimeric form.

39. A method of modulating *DEC-205 SV* expression or DEC-205 SV functional activity in a mammal, said method comprising administering to said mammal an agent for a time and under conditions sufficient to up-regulate, down-regulate or otherwise modulate expression of *DEC-205 SV* or functioning of DEC-205 SV.

40. A method for modulating *DCL-1* expression or DCL-1 functional activity in a mammal, said method comprising administering to said mammal an agent for a time and under conditions sufficient to up-regulate, down-regulate or otherwise modulate said expression or functioning.

41. A method for regulating cellular activity in a subject said method comprising administering to said subject an effective amount of an agent for a time and under conditions sufficient to modulate *DEC-205 SV* expression of DEC-205 SV functional activity.

42. A method of regulating cellular activity in a subject said method comprising administering to said subject an effective amount of an agent for a time and conditions sufficient to modulate *DCL-1* expression or DCL-1 functional activity.

43. The method according to any one of claims 41 or 42 wherein said cellular activity is cellular endocytosis, late endosome targetting, intracellular signalling, Hodgkin and Reed-Sternberg cell functioning or antigen presenting cell antigen uptake.

44. A method for the treatment and/or prophylaxis of a condition characterised by aberrant, unwanted or otherwise inappropriate functioning of DEC-205 SV or DCL-1 in a subject, said method comprising administering to said subject an effective amount of an agent as hereinbefore defined for a time and under conditions sufficient to modulate the expression of *DEC-205 SV or DCL-1* and/or functioning of DEC-205 SV or DCL-1.

45. A method for the treatment of Hodgkin's lymphoma in a mammal, said method comprising administering to said mammal an effective amount of a cytolytic and/or cytotoxic agent which agent interacts or otherwise associates with DEC-205 SV, for a time and under conditions sufficient for said agent to lyse, apoptose or otherwise kill Hodgkin and Reed-Sternberg cells.

46. Use of an agent capable of modulating the expression of *DEC-205 SV* or *DCL-1* or a derivative, homologue, analogue, chemical equivalent or mimetic thereof in the manufacture of a medicament for the modulation of cellular functional activity.

47. Use of an agent capable of modulating the activity of DEC-205 SV or DCL-1 or a derivative, homologue, analogue, chemical equivalent or mimetic thereof in the manufacture of a medicament for the modulation of cellular functional activity.

48. Use of DEC-205 SV, DCL-1, *DEC-205 SV* or *DCL-1* or a derivative, homologue, analogue, chemical equivalent or mimetic thereof in the manufacture of a medicament for the modulation of cellular functional activity.

49. Use according to claim 45 wherein said functional activity is cellular targetting, late endosome targetting, intracellular signalling, Hodgkin and Reed-Sternberg cell functioning or antigen presenting cell antigen uptake.

50. A pharmaceutical composition comprising DEC-205 SV, DCL-1, *DEC-205 SV, DCL-1* or an agent capable of modulating *DEC-205 SV* or *DCL-1* expression or DEC-205 SV or DCL-1 activity or derivative, homologue, analogue, chemical equivalent or mimetic thereof together with one or more pharmaceutically acceptable carriers and/or diluents.

51. An isolated antibody directed to the protein according to any one of claims 29-38.

52. An isolated antibody directed to the nucleic acid molecule according to any one of claims 1-28.

53. The antibody according to claim 51 or 52 wherein said antibody is a monoclonal antibody.

54. The antibody according to claim 51 or 52 wherein said antibody is a polyclonal antibody.

55. A method of diagnosing or monitoring a mammalian disease condition, which disease condition is characterised by DEC-205 SV and/or DCL-1 expression, said method comprising screening for DEC-205 SV or DCL-1 or *DEC-205 SV* or *DCL-1* in a biological sample isolated from said mammal.

56. A method for detecting an agent capable of modulating the function of DEC-205 SV or DCL-1 or its functional equivalent or derivative thereof said method comprising contacting a cell or extract thereof containing said DEC-205 SV or DCL-1 or its functional equivalent or derivative with a putative agent and detecting an altered expression phenotype associated with said DEC-205 SV or DCL-1 or its functional equivalent or derivative.

DATED this 5th day of December, 2003

THE CORPORATION OF THE TRUSTEES OF THE ORDER OF THE SISTERS OF MERCY IN QUEENSLAND
By its Patent Attorneys
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